

Challenger Society

BIBLIOGRAPHY
OF
MARINE FAUNAS
1846-1900

EDITED BY
L. A. BORRADAILE

SYNOPSIS OF THE CLASSIFICATION

AS-B
CAMBRIDGE:
PRINTED AT THE UNIVERSITY PRESS
1907

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BIBLIOGRAPHY OF MARINE FAUNAS.

SCOPE OF THE WORK.

The Bibliography deals with the seas of the whole world, but not with marine forms in inland waters, and with all extant groups of the animal kingdom found in the sea, except the Seals, Sea-cows, Penguins, Turtles, Sea-snakes, amphibious Insects of the shore, and internal parasites. It is limited to the years 1846-1900.

NATURE OF THE AREAS.

These correspond with natural faunas as nearly as is possible in our present state of knowledge of the latter, and in face of the necessity for easily definable and therefore arbitrary limits, and areas of a size which will divide the literature into manageable sections. They must not be regarded as an attempt to represent accurately the distribution of marine animals, but as a device for enabling the literature dealing with any given fauna to be obtained easily and as completely as may be.

METHOD OF CLASSIFICATION.

The principle adopted is that of the Decimal System. In this system the subject to be classified is divided into ten or fewer sections, denoted by the figures 0 to 9, each section being similarly divided, and again each section of a section, to any required number of grades. By writing in order the figures which show respectively the position which each of a series of subordinated sections holds in the section which immediately includes it, a composite number is obtained which denotes any given section. Thus in the general classification of literature made by Dewey, the inventor of the system, and in use in the catalogue of the International Institute of Bibliography, and in many libraries, the primary divisions are as follows :

0	General Works.	5	Natural Science.
1	Philosophy.	6	Useful Arts.
2	Religion.	7	Fine Arts.
3	Sociology.	8	Literature.
4	Philology.	9	History.

Natural science is again divided as follows :

50	General.	53	Physics,
51	Mathematics.		etc., to
52	Astronomy.	59	Zoology.

Zoology has 10 divisions, of which, e.g., 596 is Vertebrata. The zoological classification has been worked out in detail by the Concilium Bibliographicum of Zurich, and such portions of it as are needed are used in the present bibliography. A detailed classification of the seas of the world has not yet been made, and is attempted here for the purposes of Marine Zoology. In accordance with the practice of the Concilium and the Institute, the geographical numbers are distinguished from the systematic by being enclosed in round brackets. The position of the present bibliography in the general system is as follows:

- 5 Natural Science.
 - 9 Zoology.
 - 1 The Zoological Disciplines.
 - 9 Geographical Distribution.
 - (2 Physical Regions.
 - 6) The Sea.

LIST OF CLASSES.

Numbers in square brackets are not in use alone, and are inserted only to explain those subordinate to them.

GEOGRAPHICAL NUMBERS*.

[5919 (26...

0)] **World-wide.** For works on the fauna of more than one Ocean.

(00) General.

(01) Plankton only, oceanic and neritic.

(03) Abyssal fauna (oceanic benthos) only.

(04) Oceanic fauna only, plankton and benthos.

The above figures (.01, .03, .04) may be used to subdivide any of the Oceans or mixed areas below.

[(09)] For works limited to two neighbouring Oceans; without bathymetrical restrictions.

(09.1.3) Atlantic Ocean, North and Tropical.

(09.2.1) Mediterranean and North Atlantic Ocean.

(09.3.4) Tropical Atlantic and Southern Oceans.

(09.4.6) Southern Ocean and Eastern Pacific Ocean.

(09.5.8) North Pacific and Arctic Oceans.

(09.6.5) Eastern and North Pacific Oceans.

(09.7.2) Indopacific Ocean and Mediterranean Sea.

* For definitions of the "Oceans" and "Arcas," see below, pp. 9—16.

- (09.7.4) Indopacific and Southern Oceans.
- (09.7.5) " " North Pacific Ocean
- (09.7.6) " " Eastern Pacific Ocean
- (09.8.1) Arctic and North Atlantic Oceans.
- (09.9.4) Antarctic and Southern Oceans.

[(1)] N. Atlantic Ocean.

- (10) More than one area.
- (11) Oceanic area.
- (12) North Sea area.
- (13) Baltic area.
- (14) Azores area.
- (15) Bermuda area.
- (16) Lusitanian area.
- (17) New England area.
- (18) Norwegian area.
- (19) Icelandic area.

[(2)] Mediterranean.

- (20) More than one area.
- (23) Adriatic area.
- (25) Black Sea area.
- (26) Main Mediterranean area.

[(3)] Tropical Atlantic Ocean.

- (30) More than one area.
- (31) Oceanic area.
- (35) Caribbean area.
- (36) W. African area.
- (37) Argentinian area.
- (38) Brazilian area.
- (39) Insular area.

[(4)] Southern Ocean.

- (40) More than one area.
- (41) Oceanic area.
- (43) New Zealand area.
- (44) S. Australian area.
- (45) Kerguelen area.
- (46) S. African area.
- (47) S. Georgian area.
- (48) Magellanic area.
- (49) Tristan da Cunha area.

[(5)] N. Pacific Ocean.

- (50) More than one area.
- (51) Oceanic area.
- (52) Japanese area.
- (55) Kamchatkan area.
- (57) Alaskan area.
- (59) Californian area.

[(6)] **Eastern Pacific Ocean.**

- (60) More than one area.
- (61) Oceanic area.
- (67) Mexican area.
- (68) Peruvian area.
- (69) Insular area.

[(7)] **Indopacific Ocean.**

- (70) More than one area.
- (72) Malay area.
- (73) Mascarene area.
- (74) Indian area.
- (75) Red Sea area.
- (76) E. African area.
- (77) N. Australian area.
- (79) Polynesian area.

[(8)] **Arctic Ocean.**

- (80) More than one area.
- (81) Oceanic area.
- (84) Arctic European area.
- (85) Arctic Asiatic area.
- (87) Arctic American area.
- (88) E. Greenland area.
- (89) Labrador area.

[(9)] **Antarctic Ocean.**

- (90) More than one area (i.e. oceanic with neritic).
- (91) Oceanic area.
- (92) Neritic area.

GROUP NUMBERS.

Taken, with omissions and additions, but without altering the significance of any number, from the Conspectus of the Concilium Bibliographicum.

Divisions marked with an asterisk are inclusive of one or more that follow them, although they have as many figures in their classifying number as these subordinate groups.

[59]

0 VERTEBRATES AND INVERTEBRATES.

2* INVERTEBRATA.

[3] *Lower Invertebrate Phyla.*

31 Protozoa.

311* Rhizopoda (= Gymnomyxa). Amoeboidea. Mycetozoa.

312 Foraminifera.

313 Heliozoa.

314 Radiolaria.

315* Infusoria.

316 Flagellata (= Mastigophora).

317 Ciliata, including Acinetaria.

3171 Ciliata.

3175 Acinetaria (= Suctorina).

- 34 **Spongiae (= Porifera).**
- 341 Myxospongiae (= Carnosa).
- 342 Ceratospongiae (= Ceratosa).
- 343 Monaxonida (= Halichondrina + Spinarthrophora).
- 344 Tetractinellida.
- 345 Hexactinellida (= Hyalospongiae).
- 346 Calcispongiae (= Calcarea).
- 35* **Coelenterata.**
- 36 Actinozoa (= Anthozoa).
- 362 Alcyonaria (= Octactinia = Octocorallia).
- 363* Zoantharia (= Hexactinia = Hexacorallia).
- 364 Antipatharia.
- 365 Actinaria.
- 366 Madreporaria.
- 37 Hydrozoa (= Hydromedusae + Acalephae).
- 371 Hydromedusae, not including Siphonophora.
- 372 Siphonophora.
- 373 Acalephae.
- 38 Ctenophora.
- 39 **Echinodermata.**
- 391 Crinoidea.
- 393 Asteroidea.
- 394 Ophiuroidea.
- 395 Echinoidea.
- 396 Holothuroidea.
- 399 **Enteropneusta (= Hemichorda).**
- [4] *Mollusca and Molluscoida.*
- 40* **Mollusca.**
- 41 Lamellibranchiata.
- 42 Scaphopoda.
- 43* Gastropoda.
- 431 Amphineura (= Isopleura), including Solenogastres.
- 432 Prosobranchia (= Streptoneura), not including Heteropoda.
- 4324 Aspidobranchia (= Diotoecardia).
- 4329 Peetinibranchia (= Monotocardia), not including Heteropoda.
- 434 Heteropoda.
- 435 Opisthobranchia, not including Pteropoda.
- 438 Pulmonata.
- 44 Pteropoda.
- 45 Cephalopoda.
- 452 Tetrabranchiata (= Nautiloidea).
- 455 Dibranchiata.
- 47 **Polyzoa (= Bryozoa), including Pterobranchia.**
- 471 Ectoprocta.
- 473 Pterobranchia.
- 474 Entoprocta.

5381	Cumacea.
5382	Stomapoda.
5383	Schizopoda.
5384	Decapoda.
53841	Macrura. Anomura.
53842	Brachyura, including Dromiacea.
539	Xiphosura.
54	Arachnida.
57	Insecta.
6*	VERTEBRATA.
7	Pisces, and lower groups.
71	Cephalochorda (= Pharyngobranchii).
72	Cyclostomata (= Marsipobranchii).
73	Elasmobranchii.
731	Selachioidei.
735	Rajae.
738	Holocephali.
74	Ganoidei.
75	Teleostei.
753	Lophobranchii, including Hypostomides.
754	Plectognathi.
755	Physostomi, including Percesoces and Haplomi.
756	Anacanthini.
758	Acanthopteri, including Selenichthyes, Hemi- branchii, Pharyngognathi, Opisthomi, and Pediculati.
[9]	Mammalia.
95	Cetacea.
951	Mysticeti.
953	Denticeti.

DEFINITIONS OF THE AREAS.

[(0)] World-wide.

For works on the fauna of more than one Ocean.

(00) General.

For works not restricted to plankton (01), oceanic benthos (03), or to any geographical area.

(01) Plankton.

For works of a general scope on the plankton. Papers on planktonic groups not expressly treated as such under (00).

(03) Abyssal Fauna (Oceanic Benthos).

For works of a general scope on the fauna on or close above the bottom, outside the 100 fathom line.

(04) **Oceanic fauna.**

For works of a general nature on the whole fauna of waters more than 100 fathoms in depth, i.e. oceanic plankton and benthos.

Each of these pairs of figures (.01, .03, .04), when added to the number for any of the Oceans or Areas containing deep water, indicates that the work in question is devoted exclusively to the fauna which it represents.

[(09)] For works limited to two neighbouring oceans. Without bathymetrical restrictions. Divided geographically by pairs of oceans, indicated by the ocean-numbers separated by points.

(1) **North Atlantic Ocean.**

Northern boundary: The 100 fathom line on the European coast westwards from 43° E. (Cape Kanin) till it meets the Arctic circle. The Arctic circle from this point to the 100 fathom line on the coast of Greenland, skirting the 100 fathom line north of Iceland. The 100 fathom line of Greenland to 60° N. on the West coast. Lat. 60° N. from the 100 fathom line of Greenland to the 100 fathom line of Labrador. The 100 fathom line of Labrador and Newfoundland to 60° W. Thence a straight line to Cape Gaspé.

Western boundary: The N. American coast from Cape Gaspé to 30° N. (immediately N. of St Augustine).

Southern boundary: A line drawn from the American coast at 30° N. to the junction of Long. 75° W. with Lat. 25° N. and thence to the Tropic of Cancer at 73° W. The Tropic of Cancer till it reaches the African coast (immediately South of the Rio de Oro).

Eastern boundary: The African and European coast from the Tropic of Cancer to Cape Kanin crossing the Straits of Gibraltar by a straight line at its narrowest part.

(11) **Oceanic Area of the N. Atlantic.**

Every part of the Ocean not included in one of the areas below. More than 100 fathoms in depth, and therefore including the oceanic fauna only.

(12) **North Sea Area.**

All waters within the 100 fathom line from Ushant to the Skaw, including Rockall and the Porcupine Bank. Neritic only.

(13) **Baltic Area.**

The Baltic Sea within a line from the Skaw along the 100 fathom line to the Swedish-Norwegian boundary immediately South of Frederikshald. Neritic only.

(14) Azores Area.

All waters within the 100 fathom line of the Azores, Canary Islands and Maderia. Neritic only.

(15) Bermuda Area.

All waters within the 100 fathom line of Bermuda. Neritic only.

(16) Lusitanian Area.

All waters within the 100 fathom line from the Tropic of Cancer (immediately South of the Rio de Oro) to Ushant, excluding the Mediterranean. Neritic only.

(17) New England Area.

All waters within the 100 fathom line from Cape Gaspé to 30° N. (immediately North of St Augustine). Neritic only.

(18) Norwegian Area.

All waters within the 100 fathom line of the Norwegian and Russian coasts from Frederikshald northwards to 43° E. (Cape Kanin). Neritic only.

(19) Icelandic Area.

All waters within the 100 fathom line of Iceland and within that of the Faroes. Neritic only.

(2) Mediterranean Sea.

All waters within the narrowest part of the Straits of Gibraltar, including the Black Sea and the Suez Canal.

(23) Adriatic Area.

The waters of the Adriatic north of a line from Cape Otranto to Cape Glossa. Neritic and oceanic.

(25) Black Sea Area.

All waters within the northern entrance to the Bosphorus. Neritic and oceanic.

(26) Main Mediterranean Area.

All waters of the Mediterranean except the Adriatic and Black Sea as defined above. Neritic and oceanic.

(3) Tropical Atlantic Ocean.

Northern boundary: The southern boundary of the North Atlantic, defined above.

Western boundary: The American coast from 30° N. (immediately North of St Augustine) to the point where 66° E. crosses it.

Southern boundary: 45° S. from 66° E. to 20° E. and thence 32° S. to the African coast (immediately North of Lambert's Bay).

Eastern boundary: The African coast line between the Tropics of Cancer and 32° S.

(31) **Oceanic Area of the Tropical Atlantic.**

Every part of the Ocean not included in one of the Areas below. Oceanic only.

(35) **Caribbean Area.**

The Gulf of Mexico and the Caribbean Sea inside a line drawn from 30° N. to the junction of Long. 75° W. with Lat. 25° N., thence to the junction of Long. 68° W. with Lat. 20° N., thence along Lat. 20° N. to its junction with Long. 60° W., and thence to the junction of Long. 60° W. with the S. American coast at Barima, passing outside Barbadoes. Neritic and oceanic.

(36) **W. African Area.**

The coastal waters of West Africa between the Tropic of Cancer and 32° S., and of the Islands in the Gulf of Guinea. Neritic only.

(37) **Argentinian Area.**

The S. American coastal waters within the 100 fathom line from 45° S. (Cape Dos Bahias) to Montevideo (35° S.). Neritic only.

(38) **Brazilian Area.**

The S. American coastal waters within the 100 fathom line from 60° W. at Barima to Montevideo (35° S.). Neritic only.

(39) **Insular Area of the Tropical Atlantic.**

Waters within the 100 fathom line round Ascension, Cape Verde Islands, Fernando Noronha, St Helena, St Paul's Rocks, and Trinidad. Neritic only.

(4) **Southern Ocean.**

Northern boundary: In the Atlantic the southern boundary of the Tropical Atlantic, defined above. In the Indian and Pacific Oceans 32° S.

Southern boundary: 60° S.

(41) **Oceanic Area of the Southern Ocean.**

Every part of the Ocean not included in one of the areas below. Oceanic only.

(43) **New Zealand Area.**

All waters within the 100 fathom line round the islands of New Zealand, the Antipodes, Auckland, Campbell, Chat-ham, and Macquarie. Neritic only.

(44) S. Australian Area.

All waters within the 100 fathom line round Australia south of 32° S. and Tasmania, and round Royal Company Island. Neritic only.

(45) Kerguelen Area.

All waters within the 100 fathom line round Kerguelen, Amsterdam and St Paul, Crozet, Heard, Marion, and Prince Edward Islands. Neritic only.

(46) S. African Area.

All waters within the 100 fathom line round Africa south of 32° S. Neritic only.

(47) S. Georgian Area.

All waters within the 100 fathom line round S. Georgia, the Sandwich group, Dougharty, and Bouvet Islands. Neritic only.

(48) Magellanic Area.

All waters within the 100 fathom line round S. America and the Falkland Islands, from 45° S. on the eastern side to 32° S. on the western side, and round Juan Fernandez. Neritic only.

(49) Tristan da Cunha Area.

Waters within the 100 fathom line round Gough, and Tristan da Cunha Islands. Neritic only.

(5) North Pacific Ocean.

Northern boundary: Lat. 60° N. between Kamchatka and Alaska, excluding Nunivak Island.

Western boundary: The coast of Asia from 60° N. to Hang-Chau Bay.

Southern boundary: A line from Hang-Chau Bay to Lat. 30° S., passing south of the Chusan Islands. Along 30° N. to the 100 fathom line of Japan, and northward along the 100 fathom line to 40° N. Thence along 40° N., to the 100 fathom line of the American coast. Along the American 100 fathom line to Cape St Lucas.

Eastern boundary: The American coast line from 60° N. to Cape St Lucas.

(51) Oceanic Area of the North Pacific.

Every part of the Ocean not included in one of the Areas below. Oceanic only.

(52) Japanese Area.

From 30° N. to the middle of the Tsugaru Straits within the 100 fathom line outside Japan, including the Sea of Japan as far north as the Tsugaru Straits. Neritic and oceanic.

(55) Kamchatkan Area.

From the Tsugaru Straits to 60° N. within the 100 fathom line outside Kamchatka, including the Sea of Okhotsk and of the Sea of Japan north of Tsugaru Straits, and Bering and Komandorski Islands. Neritic and oceanic.

(57) Alaskan Area.

All waters within the 100 fathom line of the American coast from 60° N. to San Juan de Fuca Straits, including the Aleutian and Pribyloff Islands but not Nunivak Island. Neritic only.

(59) Californian Area.

All waters within the 100 fathom line of the American coast from San Juan de Fuca Straits to Cape St Lucas. Neritic only.

(6) Eastern Pacific Ocean.

Western boundary: 110° W. from Cape St Lucas to 32° S.

Eastern boundary: The American coast line from Cape St Lucas to 32° S.

(61) Oceanic Area of the Eastern Pacific.

Every part of the Ocean not included in one of the Areas below. Oceanic only.

(67) Mexican Area.

All waters within the 100 fathom line of the American coast from Cape St Lucas to 5° S. and of the islands near the coast. Neritic only.

(68) Peruvian Area.

All waters within the 100 fathom line of the American coast from 5° S. to 32° S. Neritic only.

(69) Insular Area of the Eastern Pacific.

All waters within the 100 fathom line round Clipperton, Cocos, Easter, the Galapagos, Malpelo, St Felix, and Sala-y-Gomez Islands. Neritic only.

(7) Indopacific Ocean.

Northern boundary: The southern coast line of Asia and the southern boundary of the N. Pacific Ocean as defined above.

Western boundary: The eastern coast line of Africa to 32° S.

Southern boundary: 32° S.

Eastern boundary: The 100 fathom line of the American coast line from 40° N. to Cape St Lucas, and thence 110° W. to 32° S.

(72) Malay Area.

Northern boundary: The coast line of Asia from the mouth of the Irawadi to 30° N. Thence the southern boundary of the N. Pacific as defined above.

Western boundary: 95° E. from the mouth of the Irawadi to 32° S.

Southern boundary: 32° S. from 95° E. to the 100 fathom line of the Australian coast. This line from 32° S. to 10° S. and along 10° S. to the Torres Straits, where it follows the political boundary, passing to the north of all the islands and close to the New Guinea shore. Thence the 100 fathom line of Australia to 32° S. and 32° S. to 170° E.

Eastern boundary: North of the Equator 160° E., including the Caroline group. South of the Equator 170° E., including the New Hebrides. Neritic and oceanic.

(73) Mascarene Area.

The deep water of the Indian Ocean west of 95° E., with all the Oceanic islands. Neritic and oceanic.

(74) Indian Area.

All waters within the 100 fathom line from the mouth of the Irawadi to the Straits of Bab el Mandeb. Neritic only.

(75) Red Sea Area.

Including waters of all depths, but not including the Suez Canal. Neritic and oceanic.

(76) East African Area.

All waters within the 100 fathom line along the African coast from Bab el Mandeb to 32° S., including Socotra. Neritic only.

(77) North Australian Area.

All waters within the 100 fathom line of the Australian coast north of 32° S. Neritic only.

(79) Oceanic Area.

Northern boundary: 40° N.

Western boundary: The eastern boundary of the Malay Area, defined above.

Southern boundary: 32° S.

Eastern boundary: The 100 fathom line of the American coast from 40° N. to Cape St Lucas, and thence the 110° W. line to 32° S.

Neritic and oceanic.

(8) Arctic Ocean.

Bounded by the coasts of Europe, Asia, and America, and by the northern boundaries of the Atlantic and Pacific Oceans, as defined above.

(81) Oceanic Area of the Arctic Ocean.

Every part of the Ocean not included in one of the areas below. Oceanic only.

(84) Arctic European Area.

All waters within the 100 fathom line of the northern coast of Europe, East of 43° E. (Cape Kanin), including Novaya Zemlya, and of Spitzbergen, Franz Josef Land, and Bear Island. Neritic only.

(85) Arctic Asiatic Area.

All waters within the 100 fathom line of the northern coast of Asia, including New Siberia and Wrangel Islands. Neritic only.

(87) Arctic American Area.

All waters within the 100 fathom line of the northern coast of America and the adjacent islands as far south as Cape Chudleigh, including the west coast of Greenland, and the deep water of Baffin's Bay and its offshoots. Neritic and oceanic.

(88) East Greenland Area.

All waters within the 100 fathom line of the east coast of Greenland and of Jan Mayen Island. Neritic only.

(89) Labrador Area.

All waters within the 100 fathom line of the American coast from Cape Chudleigh to Cape Gaspé. Neritic only.

(9) Antarctic Ocean.

South of 60° S.

(91) Oceanic Area of the Antarctic Ocean.

All the Antarctic Ocean outside the 100 fathom line.

(92) Neritic Area of the Antarctic Ocean.

All the Antarctic Ocean within the 100 fathom line.

FORM OF THE ENTRIES.

The Bibliography has two series of entries, arranged respectively in order of geographical numbers and of group numbers. Every work is entered in both series. Each entry contains: (1) a geographical number or a group number, (2) a group number or a geographical number, (3) the author's name, (4) reference to pages in a journal or the name of a book, (5) the date of publication. Whenever possible a word or phrase is added to the geographical or group number to give an exact locality, species, or other information.



